SUPPORTING TEXT

SUPPLEMENTAL FIGURE LEGENDS

Figure S1. The precipitation of high-concentration lauric acid in bacterial culture media. Lauric acid (31.25-500 μg/ml) was dissolved in 5% DMSO and added to the RCM or TSB. The RCM or TSB containing lauric acid was incubated at 37^{o}C for 72 h and 48 h, respectively, under anaerobic conditions, which are the same conditions as the MIC assays in Figures 1 and S2. After incubation, the precipitation of lauric acid at the high concentrations was observed (arrowheads).

Figure S2. Inhibitory effects of lauric acid on bacterial growth of *P. acnes* (ATCC 11827). *P. acnes* (ATCC 11827) (1x 10^{6} CFU/ml) was incubated with lauric acid in 5% DMSO under anaerobic conditions at 37^{o}C for 72 h. After incubation, bacterial growth was determined by measuring OD_{600} using a microplate reader. Data represent mean ± SE of three individual experiments (*P <0.05 by Student's t-test).

Figure S3. Bactericidal effects of lauric acid on *P. acnes* (ATCC 11827). *P. acnes* (ATCC 11827) (1x10^{7} CFU/ml) was incubated with 0-100 μg/ml of lauric acid in 5% DMSO in PBS for

5 h under anaerobic conditions. After incubation, bacterial suspension was diluted 1:10 -1:10^6 with PBS, and 5 μl of the dilutions was spotted on a Brucella Broth agar plate supplemented with 5% defibrinated sheep blood and hemin and vitamin K. CFUs of *P. acnes* were quantified as described in Fig. 2 . Data represent mean ± SE of three individual experiments (***P <0.0005 by Student's *t*-test). UD: undetectable.

Figure S4. Toxic effect of intradermal injection of lauric acid. Ears of ICR mice were intradermally injected with lauric acid (2 μg/20 μl) in 5% DMSO in PBS. Control ears received an equal volume of 5% DMSO in PBS (vehicle). The ear was excised and cross-sectioned 24 h after injection of lauric acid. Apoptotic cells (arrow, light blue) were detected by TUNEL assays. Differentiated keratinocytes were stained with rabbit anti-K10 IgG, followed by goat anti-rabbit IgG-TRITC conjugate (red). Nuclei were counterstained with DAPI (blue). Few apoptotic cells were detected in both vehicle- and lauric acid-treated ears, suggesting apoptosis naturally occurred in dermis. The untoxic property of lauric acid was demonstrated by the observation that intradermal injection of lauric acid did not result in an increase in cell death both in dermis and differentiated keratinocytes (red). Scale bar=200 μm. Data are representative of four separate experiments with similar results.

Figure S5. The effect of various incubation times of lauric acid on *P. acnes* growth. *P. acnes* (ATCC 6919) was incubated with 100 μg/ml of lauric acid in 5% DMSO in PBS or 5% DMSO in PBS (vehicle) for indicated times under anaerobic conditions. After diluting with PBS (1:10-1:10^6), the dilution (5 μl) was spotted on a Brucella broth agar plate for the counting of CFUs as described in MATERIALS AND METHODS under *in vitro* antimicrobial assays. Data represent mean ± SE of three individual experiments (*P<0.05 by Student's *t*-test). UD: undetectable.